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EXAMINER	
WANG, JIN CHENG	
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2672	13

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/863,405	VAN DOAN ET AL.	
	Examiner	Art Unit	
	Jin-Cheng Wang	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37, 40, 42-52, 54, 56-57, 59-74, 76, 78-82, 85, 87-89, 91, 93-94, 96-110, and 113-116* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 9.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are 1-37,40,42-52,54,56,57,59-74,76,78-82,85,87-89,91,93,94,96-110 and 113-116.

DETAILED ACTION

Response to Amendment

The amendments filed on 3/3/2004 have been entered. Claims 1-3, 10-12, 19-22, 25-27, 30-35, 37, 40, 42, 45, 49-52, 56-57, 59-67, 69, 71-74, 78-80, 82, 85, 87-89, 91, 93, 94, 96, 97, 99-101, 103-105, 108, 110, and 113-116 have been amended. Claims 38, 83, 84, 92, 95, 111, and 112 have been canceled in this amendment. Claims 39, 41, 53, 55, 58, 75, 77, 86, and 90 have been previously canceled. Claims 1-37, 40, 42-52, 54, 56-57, 59-74, 76, 78-82, 85, 87-89, 91, 93-94, 96-110, and 113-116, are pending in the application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-37, 40, 42-52, 54, 56-57, 59-74, 76, 78-82, 85, 87-89, 91, 93-94, 96-110, and 113-116 are rejected under 35 U.S.C. 102(e) as being anticipated by Politis U.S. Pat. No. 6,191,797 (hereinafter Politis).

3. Claim 1:

Politis teaches a method of creating an image, the image being formed by rendering at least a plurality of graphical objects to be composited according to a hierarchical structure

representing a compositing expression for the image, the hierarchical structure including a plurality of nodes each representing at least one region of the image or an operation for combining sub-expressions of the compositing expression, said method comprising the steps of:

Determining an opacity region representation (image regions with opacity information; column 4, lines 1-39) for at least one node (e.g., *node 52 or node 55 of figures 6-8*) of the hierarchical structure (the hierarchical structure such as the quadtree q2 or the expression tree 50 of Figures 6-8), the opacity region representation being assigned one or more of three predetermined values, each predetermined value distinctly identifying whether a corresponding sub-region of at least one object is an opaque region, a transparent region or a partially transparent region (*Politis teaches using region representation to distinctly identify sub-regions such as the totally obscured region or opaque sub-image 42 of Figure 6, transparent region such as the foreground region 39 of Figure 6 and partially transparent region such as partially obscured region or the bounding box of text 43 of Figure 6 represented by the node. Politis teaches determining if the region represented by the node is obscured either totally or partially by one of the regions*, see Figures 9-11; column 7, lines 20-64; column 9, lines 1-11);

Determining an obscurance region representation (such as q2 stored as the obscuring region or the region represented by the node 55 or the node 52; *A region representation is known as quadtrees in which the creation of a quadtree representing a region of an image requires the sub-division of the region into a plurality of cells or sub-regions, each cell being a portion of the region and each cell represented by a node of the quadtree*, see the abstract, column 3, lines 44-58; column 15-16) for the node (e.g., node 51 or the node 55 or the node 52 of figures 6-8) based on an analysis of opacity region representation (the image regions having opacity information)

associated with the node of the hierarchical structure (*image regions having opacity information includes the opaque sub-image 42 of Figure 6 or the bounding box of text 43 of Figure 6 associated with the node 51 of Figure 6; because the resolution of the region is represented by the quadtree*), the obscurance region representation (such as the node 52 or the node 55 or the node 51 or the quadtree q2) being assigned one or more of a plurality of further predetermined values, each further predetermined value distinctly identifying whether a corresponding sub-region of the at least one object is in the image (*Politis teaches the obscurance region representation that indicates at least one visible region such as unobscured region of the circle B of Figure 6. If a node is partly obscured by one or more regions represented by other nodes in the expression, a clipping operator is applied to the node in such a way that, when executing a compositing operator, substantially unobscured or visible regions of the image represented at the node are in the resultant composite of the region of the node. When an image is composited and subsequently rendered from an expression tree comprising nodes clipped by a clipping operator, substantially those portions of the graphical elements that are unobscured or visible by other graphical element of the image are reproduced or rendered.* See column 7, lines 20-64);

Partitioning the object (*the object can be viewed as a single object or an object comprising a plurality of graphical elements, objects or cells*) into a plurality of regions (*Partitioning a space into cells. For example, the hierarchical data structures suitable for representing a region or portion of an image and such region representation is known as quadtrees in which the creation of a quadtree representing a region of an image requires the sub-division of the region into a plurality of cells, each cell being a portion of the region and*

each cell represented by a node of the quadtree or the object is being clipped, see the abstract, column 3, lines 44-58; figures 6-8; columns 12-14);

Overlaying (compositing by passing down the quadtree q2) the obscurance region representation (e.g., the quadtree representation q2 stored as the obscuring region of node 52) on the partitioned object (e.g., any object or a plurality of graphical elements can be partitioned into a plurality of regions including an unobscured region such as the node 55 represents a plurality of the partitioned regions) such that the partitioned object is substantially encompassed within the obscurance region representation (if the region represented by the node is encompassed or totally obscured by the one or more regions, see the abstract; column 15, lines 15-20);

Traversing (the expression tree is traversed node by node) the overlaid obscurance region representation (q2) to identify any of the plurality of regions of the partitioned object which include at least a portion of the visible region (Traversing the nodes of an object's quadtree, column 15, lines 21-45, column 8, lines 33-44);

Creating the image by rendering (compositing) the identified regions (e.g., column 1, lines 28-43; column 7, lines 44-54; column 15-16).

In view of the claim elements, the Examiner notes that:

- A quadtree of Politis corresponds to a region representation or a hierarchical structure of the claimed invention.
- The expression tree representing a region of image comprising text or other discrete graphical elements as shown in a variety of figures such as Figures 3 and 6-8 is the object in the claim invention.

- Any object can be represented by discrete graphical elements or be partitioned into a plurality of sub-regions or cells and then be represented by a quadtree within the region representation of a hierarchical data structure. Therefore, this implies the "partitioning" and "overlaying" steps in the claimed invention.
- Traversing of the claim invention is the traversing means for passing back or passing down in the compositing of the graphical elements represented in the hierarchical data structure.

Claim 2:

The claim 2 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of traversing the hierarchical structure to detect the node including the obscurance region representation. However, Politis further discloses the claimed limitation of traversing the hierarchical structure to detect the node including the obscurance region representation (e.g., Figures 6-11; column 15, lines 21-45, column 8, lines 33-44).

Claim 3:

The claim 3 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that the obscurance region representation is traversed for each of the plurality of regions of the partitioned object. However, Politis further discloses the claimed limitation that the obscurance region representation is traversed for each of the plurality of regions of the partitioned object (e.g., Figures 6-11; column 15, lines 21-45, column 8, lines 33-44).

Claim 4:

The claim 4 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of producing a map for the plurality of regions, wherein said map at least indicates any region which includes at least a portion of the visible region. However, Politis further discloses the claimed limitation of producing a map for the plurality of regions (tagged for clipping at a later stage), wherein said map at least indicates any region which includes at least a portion of the visible region (e.g., Figures 6-11; column 15, lines 54-67).

Claim 5:

The claim 5 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that the map includes a flag for each of the regions which includes at least a portion of the visible region. However, Politis further discloses the claimed limitation that the map includes a flag for each of the regions which includes at least a portion of the visible region (e.g., Figures 6-11; column 20, lines 1-3).

Claim 6:

The claim 6 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of "run length encoding". However, Politis further discloses the claimed limitation of "run length encoding" (e.g., column 3, lines 44-59).

Claim 7:

The claim 7 encompasses the same scope of invention as that of claim 4 except additional claimed limitation that said map is traversed in a predetermined order to determine said identified regions. However, Politis further discloses the claimed limitation that said map is traversed in a predetermined order to determine said identified regions (e.g., column 15, lines 7-67).

Claim 8:

The claim 8 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of "right leaning hierarchical structure". However, Politis further discloses the claimed limitation of "right leaning hierarchical structure" (e.g., figures 4-8).

Claim 9:

The claim 9 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that the hierarchical structure is a graphic object tree. However, Politis further discloses the claimed limitation that the hierarchical structure is a graphic object tree (e.g., Figures 6-8; column 14, 29-39, column 15, lines 7-67). The examiner interprets a graphic object tree as an expression tree.

Claim 10:

The claim 10 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that the obscurance region representation is a quadtree. However, Politis further discloses the claimed limitation that the obscurance region representation is a quadtree (e.g., column 15, lines 7-67).

Claim 11:

The claim 11 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of traversing the hierarchical structure to detect the node including the obscurance region representation. However, Politis further discloses the claimed limitation of traversing the hierarchical structure to detect the node including the obscurance region representation (e.g., Figures 6-8; column 15, lines 21-45, column 8, lines 33-44).

Claim 12:

The claim 12 encompasses the same scope of invention as that of claim 11 except additional claimed limitation that the obscurance region representation is traversed for each of the plurality of regions of the partitioned object. However, Politis further discloses the claimed limitation that the obscurance region representation is traversed for each of the plurality of regions of the partitioned object (e.g., column 15, lines 21-45, column 8, lines 33-44).

Claims 13-19:

The claim 13, 14, 15, 16, 17, 18 and 19 encompasses the same scope of invention as that of claim 11 except additional claimed limitation that is respectively identical to claim 4, 5, 6, 7, 8, 9, 10. The claims are rejected for the same reason set forth in above.

Claims 20-25:

The claim 20, 21, 22, 23, 24, 25 encompasses the same scope of invention as that of claim 1, 2, 3, 4, 9, 10 except additional claimed limitation of "an apparatus". However, Politis further discloses the claimed limitation of "an apparatus" (see the abstract, figure 12).

Claims 26-30:

The claim 26, 27, 28, 29, 30 encompasses the same scope of invention as that of claim 11, 12, 13, 18, 19 except additional claimed limitation of "an apparatus". However, Politis further discloses the claimed limitation of "an apparatus" (see the abstract, figure 12).

Claims 31:

The claim 31 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of "a computer program for a computer comprising software code portions for performing a method". However, Politis further discloses the claimed limitation of "a computer program for a computer comprising software code portions for performing a method" (column 3, lines 36-37, column 18, lines 29-31).

Claims 32:

The claim 32 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of "a computer readable medium storing a computer program". However, Politis further discloses the claimed limitation of "a computer readable medium storing a computer program" (figure 12, column 3, lines 36-37, column 18, lines 29-31).

4. Claim 33:

Politis teaches a method for optimizing an expression tree, the expression tree representing a compositing expression for compositing an image and comprising a plurality of nodes, each node of the expression tree representing an object of the image or an operation for combining sub-expressions of the compositing expression, said method comprising the steps of:

Determining an opacity region representation (column 4, lines 1-39) for at least one node (e.g., the node 51 or the node 52 or the node 55 of figures 6-8 having the opacity information) of the expression tree (expression tree 50 or the quadtree q2), the opacity region representation being assigned one or more of three predetermined values, each predetermined value distinctly identifying whether a corresponding sub-region (*a sub-region represented by a descendant node*) of at least one object is an opaque region, a transparent region or a partially transparent region

(*Politis teaches using region representation to distinctly identify sub-regions such as the totally obscured region or opaque sub-image 42 of Figure 6, transparent region such as the foreground region 39 of Figure 6 and partially transparent region such as partially obscured region or the bounding box of text 43 of Figure 6 represented by the node. Politis teaches determining if the region represented by the node is obscured either totally or partially by one of the regions*, see Figures 9-11; column 7, lines 20-64; column 9, lines 1-11);

Optimizing (column 16) the expression tree by determining an obscurance region representation (such as the region represented by the quadtree q2 or the image regions represented by the node 51, the node 52 or the node 55; *A region representation is known as quadtrees in which the creation of a quadtree representing a region of an image requires the sub-division of the region into a plurality of cells or sub-regions, each cell being a portion of the region and each cell represented by a node of the quadtree, see the abstract*, column 3, lines 44-58; column 16, lines 43-64; column 17-18) for at least the node (e.g., the node 51 or the node 52 or the node 55 of figures 6-8) of the expression tree (the expression tree 50 or the quadtree q2) based on an analysis of the opacity region representation (the regions represented by the quadtree q2 or the node 51 or the node 52 or the node 55 having the opacity information) associated with the node of the expression tree (the node 51, or the node 52, or the node 55 of the expression tree wherein the sub-regions are the opaque sub-image 42 of Figure 6 or the bounding box of text 43 of Figure 6 associated with the node 51 of Figure 6-8; because the resolution of the region is represented by the quadtree), the obscurance region representation being assigned one or more of a plurality of further predetermined values, each further predetermined value distinctly identifying whether a corresponding sub-region is visible in the image (e.g., *Politis teaches the*

obscurance region representation q2 that indicates at least one visible region such as unobscured region of the circle B of Figure 6. If a node is partly obscured by one or more regions represented by other nodes in the expression, a clipping operator is applied to the node in such a way that, when executing a compositing operator, substantially unobscured or visible regions of the image represented at the node are in the resultant composite of the region of the node. When an image is composited and subsequently rendered from an expression tree comprising nodes clipped by a clipping operator, substantially those portions of the graphical elements that are <u>*unobscured or visible*</u> *by other graphical element of the image are reproduced or rendered.* See column 7, lines 20-64; column 17-18).

Claim 34:

The claim 34 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the opacity region representation being a first hierarchical structure. However, Politis further discloses the claimed limitation of the opacity region representation being a first hierarchical structure (e.g., the node 52 or the node 55 of figures 6-8; column 10, lines 13-26).

Claim 35:

The claim 35 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the obscurance region representation being a second hierarchical structure. However, Politis further discloses the claimed limitation of the obscurance region representation being a second hierarchical structure (e.g., the region representation by the q2 quadtree; Figures 6-11; column 7, lines 44-54, column 15, lines 53-67).

Claim 36:

The claim 36 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of identifying nodes representing complex graphical object. However, Politis further discloses the claimed limitation of identifying nodes representing complex graphical object (the node 52 or the node 55 representing complex graphical object; Figures 6-11; column 15, lines 53-67). The examiner interprets a complex graphical object as a graphical object such as a bounding box comprising text.

Claim 37:

The claim 37 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of determining an opacity region representation for each node identified. However, Politis further discloses the claimed limitation of determining an opacity region representation for each node identified (the opacity region representation for the node 52 or the node 55; Figures 6-11; column 7, lines 44-54, column 15, lines 53-67).

Claim 40:

The claim 40 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the opacity region representation of a child node being at least propagated to a parent node associated with the child node. However, Politis further discloses the claimed limitation of the opacity region representation of a child node being at least propagated to a parent node associated with the child node (e.g., Figures 6-11; column 15, lines 53-67).

Claim 42:

The claim 42 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the obscurance region representation of a child node being at least propagated to a parent node associated with the child node. However, Politis further discloses the claimed limitation of the obscurance region representation of a child node being at least propagated to a parent node associated with the child node (e.g., Figures 6-11; column 15, lines 7-67).

Claim 43:

The claim 43 encompasses the same scope of invention as that of claim 34 except additional claimed limitation that the hierarchical structure is dependent on an operation associated with a node for which the first hierarchical structure is constructed.

However, Politis further discloses the claimed limitation that the hierarchical structure is dependent on an operation associated with a node for which the first hierarchical structure is constructed (e.g., Figures 6-8; column 15, lines 7-67).

Claim 44:

The claim 44 encompasses the same scope of invention as that of claim 35 except additional claimed limitation that the second hierarchical structures for a node are constructed by combining any first hierarchical structures associated with the node. However, Politis further discloses the claimed limitation that the second hierarchical structures for a node are constructed by combining any first hierarchical structures associated with the node (e.g., the first hierarchical structures being the regions represented by the node 52 and 55 and the second hierarchical structures being the node 51 or the quadtree q2; column 15, lines 7-67).

Claim 45:

The claim 45 encompasses the same scope of invention as that of claim 34 except additional claimed limitation of each leaf node of the first hierarchical structure being assigned one of the predetermined values depending on an opacity of a region associated with said leaf node. However, Politis further discloses the claimed limitation of each leaf node of the first hierarchical structure being assigned one of the predetermined values depending on an opacity of a region associated with said leaf node (Table 1, column 15, lines 7-67).

Claim 46:

The claim 46 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of "right leaning tree". However, Politis further discloses the claimed limitation of "right leaning tree" (e.g., Figures 6-8; column 3, lines 44-59, figures 5 and 6).

Claim 47:

The claim 47 encompasses the same scope of invention as that of claim 34 except additional claimed limitation that each node of the first hierarchical structure comprises a pointer indicating children nodes associated with the node. However, Politis further discloses the claimed limitation that each node of the first hierarchical structure comprises a pointer (address in a data structure) indicating children nodes associated with the node (e.g., column 20, lines 1-3).

Claim 48:

The claim 48 encompasses the same scope of invention as that of claim 35 except additional claimed limitation that the second hierarchical structure is quadtree. However, Politis further discloses the claimed limitation that the second hierarchical structures is a quadtree (column 15, lines 7-67).

Claim 49:

The claim 49 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the opacity region representation being a bounding box. However, Politis further discloses the claimed of the opacity region representation being a bounding box (e.g., Figures 6-8; column 15, lines 7-67).

Claim 50:

The claim 50 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the obscurance region representation being a bounding box. However, Politis further discloses the claimed limitation of the obscurance region representation being a bounding box (e.g., Figures 6-8; column 15, lines 7-67).

5. Claim 51:

Politis teaches a method for optimizing an expression tree, the expression tree representing a compositing expression for compositing an image and comprising a plurality of nodes, each node of the expression tree representing an object of an image or an operation for combining sub-expressions of the compositing expression, said method comprising the steps of:

Determining an opacity quadtree (e.g., the q2 quadtree; column 4, lines 1-39) for at least one node (e.g., node 52 or the node 55 of figures 6-8) of the expression tree (the expression tree 50 or the quadtree q2), the opacity quadtree being assigned one or more of three predetermined values, each predetermined value distinctly identifying whether a corresponding sub-region of at least one object is an opaque region, a transparent region or a partially transparent region (e.g., *Politis teaches using region representation that can distinctly identify sub-regions such as the totally obscured region or opaque sub-image 42 of Figure 6, transparent region such as the foreground region 39 of Figure 6 and partially transparent region such as partially obscured region or the bounding box of text 43 of Figure 6 represented by the node. Politis teaches determining if the region represented by the node is obscured either totally or partially by one of the regions*, see Figures 9-11; column 7, lines 20-64; column 9, lines 1-11);

Optimizing the expression tree (column 8, lines 45-60; column 16) by determining an obscurance quadtree (*A region representation is known as quadtrees in which the creation of a quadtree representing a region of an image requires the sub-division of the region into a plurality of cells or sub-regions, each cell being a portion of the region and each cell represented by a node of the quadtree*, see the abstract, column 3, lines 44-58) for at least the node (e.g., node 51 or the node 52 or the node 55 of figures 6-8) of the expression tree (the expression tree 50 or the quadtree q2) using the opacity quadtree (q2) associated with the node of the expression tree (examples of the sub-regions are the opaque sub-image 42 of Figure 6 or the bounding box of text 43 of Figure 6 associated with the node 51 of Figure 6; because the resolution of the region is represented by the quadtree), and the obscurance quadtree being assigned one or more of a plurality of further predetermined values, each further predetermined

value distinctly identifying whether a corresponding sub-region is visible in the image (*Politis teaches the obscurance region representation that indicates at least one visible region such as unobscured region of the circle B of Figure 6. If a node is partly obscured by one or more regions represented by other nodes in the expression, a clipping operator is applied to the node in such a way that, when executing a compositing operator, substantially unobscured or visible regions of the image represented at the node are in the resultant composite of the region of the node. When an image is composited and subsequently rendered from an expression tree comprising nodes clipped by a clipping operator, substantially those portions of the graphical elements that are* <u>*unobscured or visible*</u> *by other graphical element of the image are reproduced or rendered.* See column 7, lines 20-64; column 15-18).

6. Claim 52:

Politis teaches a method for optimizing an expression tree, the expression tree representing a compositing expression for compositing an image and comprising a plurality of nodes, each node of the expression tree representing an object of the image or an operation for combining sub-expressions of the compositing expression, said method comprising the steps of:

Identifying at least one node having an associated complex graphical object (See Figures 6-8);

Determining opacity information for the node (column 4);

Determining an opacity region representation (column 4, lines 1-39) for the node based on the opacity information associated with the node (e.g., the node 51 or the node 52 or the node

55 of figures 6-8; image region representation in hierarchical data structures are known in the art as quadtree or expression tree), the opacity region representation (e.g., the image regions having opacity information) being assigned one or more of three predetermined values, each predetermined value distinctly identifying whether a corresponding sub-region of at least one object is an opaque region, a transparent region or a partially transparent region (*Politis teaches using region representation that can distinctly identify sub-regions such as the totally obscured region or opaque sub-image 42 of Figure 6, transparent region such as the foreground region 39 of Figure 6 and partially transparent region such as partially obscured region or the bounding box of text 43 of Figure 6 represented by the node. Politis teaches determining if the region represented by the node is obscured either totally or partially by one of the regions*, see column 7, lines 20-64; column 9, lines 1-11);

Optimizing (column 16) the expression tree by determining an obscurance region representation (e.g., the regions represented by the node 55 or the node 52 or the node 51; *A region representation is known as quadtrees in which the creation of a quadtree representing a region of an image requires the sub-division of the region into a plurality of cells or sub-regions, each cell being a portion of the region and each cell represented by a node of the quadtree*, see the abstract, column 3, lines 44-58; column 16-18) for the node (e.g., the node 51 or the node 52 or the node 55 of figures 6-8) using the opacity region representation (the quadtree q2 or the image regions represented by the node 55 or the node 52 with *the opaque sub-image 42 of Figure 6 or the bounding box of text 43 of Figure 6 associated with the node 51 of Figure 6; because the resolution of the region is represented by the quadtree*), the obscurance region representation (the quadtree q2 or the region represented by the node 55) being assigned one or

more of a plurality of further predetermined values, each further predetermined value distinctly identifying whether a corresponding sub-region is visible in the image (e.g., *Politis teaches the obscurance region representation that indicates at least one visible region such as unobscured region of the circle B of Figure 6. If a node is partly obscured by one or more regions represented by other nodes in the expression, a clipping operator is applied to the node in such a way that, when executing a compositing operator, substantially unobscured or visible regions of the image represented at the node are in the resultant composite of the region of the node. When an image is composited and subsequently rendered from an expression tree comprising nodes clipped by a clipping operator, substantially those portions of the graphical elements that are* <u>*unobscured or visible*</u> *by other graphical element of the image are reproduced or rendered.* See column 7, lines 20-64).

Claim 54:

The claim 54 encompasses the same scope of invention as that of claim 52 except additional claimed limitation that each node having an associated complex graphical object is tagged. However, Politis further discloses the claimed limitation that each node having an associated complex graphical object is tagged (column 7, lines 55-64, column 8, lines 7-17).

Claim 56:

The claim 56 encompasses the same scope of invention as that of claim 52 except additional claimed limitation that opacity information is propagated down the expression tree.

However, Politis further discloses the claimed limitation that opacity information is propagated down the expression tree (column 8, lines 33-44, column 15, lines 53-67, column 16, lines 1-19).

Claim 57:

The claim 57 encompasses the same scope of invention as that of claim 52 except additional claimed limitation that an opacity region representation of a child node is at least propagated to a parent node associated with the child node. However, Politis further discloses the claimed limitation that an opacity region representation of a child node is at least propagated to a parent node associated with the child node (column 15, lines 7-33).

Claim 59:

The claim 59 encompasses the same scope of invention as that of claim 52 except additional claimed limitation of an obscurance region representation of a parent node being at least propagated to a child node associated with the parent node. However, Politis further discloses the claimed limitation of the obscurance region representation of a parent node being at least propagated to a child node associated with the parent node (column 15, lines 7-67).

Claim 60:

The claim 60 encompasses the same scope of invention as that of claim 52 except additional claimed limitation of the opacity region representation being dependent on an operation associated with a node for which the first region representation is determined. However, Politis further discloses the claimed limitation of the opacity region representation being dependent on an operation associated with a node for which the first region representation is determined (compositing operations, Table 1, column 3, lines 22-67, column 4, lines 1-4).

Claim 61:

The claim 61 encompasses the same scope of invention as that of claim 52 except additional claimed limitation of the obscurance region representation for a node being determined by combining any first region representations associated with the node. However, Politis further discloses the claimed limitation of the obscurance region representation for a node being determined by combining any first region representations associated with the node (column 15, lines 7-67).

Claim 62:

The claim 62 encompasses the same scope of invention as that of claim 52 except additional claimed limitation of each leaf node of the opacity region representation being assigned a value depending on an opacity of a region associated with the leaf node.

However, Politis further discloses the claimed limitation of each leaf node of the opacity region representation being assigned a value depending on an opacity of a region associated with the leaf node (Table 1, column 3, lines 22-67, column 4, lines 1-4).

Claim 63:

The claim 63 encompasses the same scope of invention as that of claim 52 except additional claimed limitation that each node of the opacity region representation comprises a pointer to indicate children nodes associated with the node. However, Politis further discloses the claimed limitation that each node of the opacity region representation comprises a pointer to indicate children nodes associated with the node (column 20, lines 1-3).

Claim 64:

The claim 64 encompasses the same scope of invention as that of claim 52 except additional claimed limitation that the opacity and obscurance region representations are quadtrees. owever, Politis further discloses the claimed limitation that the opacity and obscurance region representations are quadtrees (column 15, lines 7-67).

Claims 65-74 and 76:

The claim 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 76 encompasses the same scope of invention as that of claim 33, 34, 35, 36, 37, 48, 49, 50, 51, 52, 54 except additional claimed limitation of "an apparatus". However, Politis further discloses the claimed limitation of "an apparatus" (see the abstract, figure 12).

Claims 78:

The claim 78 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of "a computer program for a computer comprising software code portions for performing a method". However, Politis further discloses the claimed limitation of "a computer program for a computer comprising software code portions for performing a method" (column 3, lines 36-37, column 18, lines 29-31).

Claims 79:

The claim 79 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of "a computer readable medium storing a computer program". However, Politis further discloses the claimed limitation of "a computer readable medium storing a computer program" (figure 12, column 3, lines 36-37, column 18, lines 29-31).

7. Claim 80:

Politis teaches a method for optimizing an expression tree, the expression tree representing a compositing expression for compositing an image and comprising a plurality of nodes, each node of the expression tree representing an object of the image or an operation for combining sub-expressions of the compositing expression, said method comprising the steps of:

Determining an opacity quadtree (column 4, lines 1-39) for at least one node (e.g., node 51 or the node 52 or the node 55 of figures 6-8) of the expression tree (the expression tree 51 or the quadtree q2), each node of the opacity quadtree (e.g., the expression tree 50) being assigned one or more of three predetermined values, each predetermined value distinctly identifying whether a corresponding sub-region is an opaque region, a transparent region or a partially transparent region represented by the node (*Politis teaches using region representation to distinctly identify sub-regions such as the totally obscured region or opaque sub-image 42 of Figure 6, transparent region such as the foreground region 39 of Figure 6 and partially transparent region such as partially obscured region or the bounding box of text 43 of Figure 6 represented by the node. Politis teaches determining if the region represented by the node is obscured either totally or partially by one of the regions*, see column 7, lines 20-64; column 9, lines 1-11; column 15-18);

Optimizing (column 16) the expression tree by determining compositing information (*A region representation is known as quadtrees in which the creation of a quadtree representing a region of an image requires the sub-division of the region into a plurality of cells or sub-regions, each cell being a portion of the region and each cell represented by a node of the quadtree*, see

the abstract, column 3, lines 44-58) for at least the node (e.g., the node 51 or the node 52 or the node 55 of figures 6-8) of the expression tree (the expression tree 50 or the quadtree q2) using the opacity quadtree (the existing quadtree) associated with the node (the quadtree q2 or the region represented by the node 52 or the node 55 or the node 51 wherein *opacity information includes the opaque sub-image 42 of Figure 6 or the bounding box of text 43 of Figure 6 associated with the node 51 of Figure 6; because the resolution of the region is represented by the quadtree*), wherein the compositing information represents at least one visible region to be composited for an object associated with the node (e.g., *Politis teaches the obscurance region representation that indicates at least one visible region such as unobscured region of the circle B of Figure 6. If a node is partly obscured by one or more regions represented by other nodes in the expression, a clipping operator is applied to the node in such a way that, when executing a compositing operator, substantially unobscured or visible regions of the image represented at the node are in the resultant composite of the region of the node. When an image is composited and subsequently rendered from an expression tree comprising nodes clipped by a clipping operator, substantially those portions of the graphical elements that are <u>unobscured or visible</u> by other graphical element of the image are reproduced or rendered.* See column 7, lines 20-64).

Claim 81:

The claim 81 encompasses the same scope of invention as that of claim 80 except additional claimed limitation that the compositing information is represented by a first hierarchical structure. However, Politis further discloses the claimed limitation that the compositing information is represented by a first hierarchical structure (Table 1, figures 7 and 8).

Claim 82:

The claim 82 encompasses the same scope of invention as that of claim 81 except additional claimed limitation of identifying nodes of the expression tree, for which a first hierarchical structure is required, depending on the opacity quadtree associated with the node. However, Politis further discloses the claimed limitation of identifying nodes of the expression tree, for which a first hierarchical structure is required, depending on the opacity quadtree associated with the node (column 7, lines 21-28).

Claim 85:

The claim 85 encompasses the same scope of invention as that of claim 81 except additional claimed limitation that the first hierarchical structure is dependent on the opacity quadtree. However, Politis further discloses the claimed limitation that the first hierarchical structure is dependent on the opacity quadtree (figures 6-8).

Claim 87:

The claim 87 encompasses the same scope of invention as that of claim 80 except additional claimed limitation that the opacity quadtree of a child node is at least propagated to a parent node associated with the child node. However, Politis further discloses the claimed limitation that the opacity quadtree of a child node is at least propagated to a parent node associated with the child node (e.g., figures 6-8; column 15, lines 7-67).

Claim 88:

The claim 88 encompasses the same scope of invention as that of claim 87 except additional claimed limitation that an opacity quadtree of the parent node is determined by merging at least two further opacity quadtrees.

However, Politis further discloses the claimed limitation that the opacity quadtree of the parent node is determined by merging at least two further opacity quadtrees (column 15, lines 7-67).

Claim 89:

The claim 89 encompasses the same scope of invention as that of claim 87 except additional claimed limitation that an opacity quadtree of the parent node is determined by merging at least one opacity quadtree and a bounding box.

However, Politis further discloses the claimed limitation that an opacity quadtree of the parent node is determined by merging at least one opacity quadtree and a bounding box (column 15, lines 7-67).

Claim 91:

The claim 91 encompasses the same scope of invention as that of claim 81 except additional claimed limitation that an obscurance quadtree of a parent node is at least propagated to a child node associated with the parent node. However, Politis further discloses the claimed limitation that an obscurance quadtree of a parent node is at least propagated to a child node associated with the parent node (column 8, lines 33-44).

Claim 93:

The claim 93 encompasses the same scope of invention as that of claim 80 except additional claimed limitation that each leaf node of the obscurance quadtree is assigned a value depending on an opacity of a region associated with the leaf node.

However, Politis further discloses the claimed limitation that each leaf node of the obscurance quadtree is assigned a value depending on an opacity of a region associated with the leaf node (Table 1).

Claim 94:

The claim 94 encompasses the same scope of invention as that of claim 80 except additional claimed limitation that each node of the opacity quadtree comprises a pointer to indicate children nodes associated with the node. However, Politis further discloses the claimed limitation that each node of the opacity quadtree comprises a pointer to indicate children nodes associated with the node (column 20, lines 1-3).

8. Claim 96:

Politis teaches a method for optimizing an expression tree, the expression tree representing a compositing expression for compositing an image and comprising a plurality of nodes, each node of the expression tree representing an object of the image or an operation for combining sub-expressions of the compositing expression, said method comprising the steps of:

Determining an opacity region representation (column 4, lines 1-39) for at least one node (e.g., the node 51 or the node 52 or the node 55 of figures 6-8) of the expression tree (the

expression tree 51 or the quadtree q2), each node of the opacity representation (the quadtree q2 or the region represented by the node 52 or the region represented by the node 55 having the opacity information) being assigned one or more of three predetermined values, each predetermined value distinctly identifying whether a corresponding sub-region is an opaque region, a transparent region or a partially transparent region (*e.g., Politis teaches using region representation that can distinctly identify sub-regions such as the totally obscured region or opaque sub-image 42 of Figure 6, transparent region such as the foreground region 39 of Figure 6 and partially transparent region such as partially obscured region or the bounding box of text 43 of Figure 6 represented by the node. Politis teaches determining if the region represented by the node is obscured either totally or partially by one of the regions*, see column 7, lines 20-64; column 9, lines 1-11; column 15-18);

Optimizing (column 16) the expression tree by determining a hierarchical structure (*A region representation is known as quadtrees in which the creation of a quadtree representing a region of an image requires the sub-division of the region into a plurality of cells or sub-regions, each cell being a portion of the region and each cell represented by a node of the quadtree*, see the abstract, column 3, lines 44-58; the hierarchical structure such as the expression tree) for at least one node (e.g., the node 51 or the node 52 or the node 55 of figures 6-8) of the expression tree (the quadtree q2 or the expression tree 50 *having the opaque sub-image 42 of Figure 6 or the bounding box of text 43 of Figure 6 associated with the node 51 of Figure 6; because the resolution of the region is represented by the quadtree*), wherein the the hierarchical structure is determined for a node using opacity region representation (the existing image regions in the expression tree having the opacity channel information) determined for the node, and wherein

the hiearchical structure (the expression tree) represents at least visible regions, load regions and invisible regions to be composited, for an object associated with the node (e.g., *Politis teaches the obscurance region representation that indicates at least one visible region such as unobscured region of the circle B of Figure 6. If a node is partly obscured by one or more regions represented by other nodes in the expression, a clipping operator is applied to the node in such a way that, when executing a compositing operator, substantially unobscured or visible regions of the image represented at the node are in the resultant composite of the region of the node. When an image is composited and subsequently rendered from an expression tree comprising nodes clipped by a clipping operator, substantially those portions of the graphical elements that are unobscured or visible by other graphical element of the image are reproduced or rendered.* See column 7, lines 20-64; column 15-18).

9. Claim 97:

Politis teaches a method for optimizing an expression tree, the expression tree representing a compositing expression for compositing an image and comprising a plurality of nodes, each node of the expression tree representing an object of the image or an operation for combining sub-expressions of the compositing expression, said method comprising the steps of:

Performing a first traversal of the expression tree (column 14; the first traversal being the "passing back to parent node" operations) to determine an opacity region representation (column 4, lines 1-39) for at least one node (e.g., the node 51 or the node 52 or the node 55 of figures 6-8) of the expression tree (image region representation in hierarchical data structures are known in

the art as quadtree or expression tree), the opacity region representation (the image regions having the opacity information or the quadtree q2 or the region represented by any node of Figures 6-8) being assigned one or more of three predetermined values, each predetermined value distinctly identifying whether a corresponding sub-region is an opaque region, a transparent region or a partially transparent region (e.g., *Politis teaches using region representation that can distinctly identify sub-regions such as the totally obscured region or opaque sub-image 42 of Figure 6, transparent region such as the foreground region 39 of Figure 6 and partially transparent region such as partially obscured region or the bounding box of text 43 of Figure 6 represented by the node. Politis teaches determining if the region represented by the node is obscured either totally or partially by one of the regions*, see column 7, lines 20-64; column 9, lines 1-11);

Identifying nodes of the expression tree, for which compositing information is required, depending on the opacity region representation associated with the node (column 15, lines 7-67); and

Optimizing (column 16) the expression tree by performing a second traversal (passing down the quadtree q2) of the expression tree to determine compositing information for each node of the expression tree identified in the first traversal (passing back to the parent node), wherein the compositing information is determined for a node using opacity region representation (image regions represented with the alpha information) determined for the node, and where the compositing information indicates at least invisible regions (unobscured graphical element), load regions (any regions are viewed as load regions) and invisible regions (the foreground regions) represented by the node (*if a node is partly obscured by one or more regions represented by*

other nodes in the expression, a clipping operator is applied to the node in such a way that, when executing a compositing operator, substantially unobscured or visible regions of the image represented at the node are in the resultant composite of the region of the node. When an image is composited and subsequently rendered from an expression tree comprising nodes clipped by a clipping operator, substantially those portions of the graphical elements that are unobscured or visible by other graphical element of the image are reproduced or rendered. See column 7, lines 20-64; column 15-18).

Claim 98:

The claim 98 encompasses the same scope of invention as that of claim 97 except additional claimed limitation that is identical to claim 81. The claims are rejected for the same reason set forth in claim 81.

Claim 99:

The claim 99 encompasses the same scope of invention as that of claim 98 except additional claimed limitation that the opacity region representation comprises a second hierarchical structure representing an opacity of a region associated with a node. However, Politis further discloses the claimed limitation that the opacity region representation comprises a second hierarchical structure representing an opacity of a region associated with a node (column 15, lines 7-67).

Claim 100:

The claim 100 encompasses the same scope of invention as that of the claim 98 except additional claim limitation of the opacity region representation being a bounding box representing an opacity of a region associated with a node. However, Politis further discloses the claim limitation of the opacity region representation being a bounding box representing an opacity of a region associated with a node (column 15, lines 7-67).

Claim 101:

The claim 101 encompasses the same scope of invention as that of claim 98 except additional claimed limitation that said first hierarchical structure is dependent on said opacity region representation. However, Politis further discloses the claimed limitation that said first hierarchical structure is dependent on said opacity region representation (Table 1, column 7, lines 44-54, column 15, lines 53-67).

Claim 102:

The claim 102 encompasses the same scope of invention as that of claim 97 except additional claimed limitation of the first traversal being a bottom-up traversal. However, Politis further discloses the claimed limitation of the first traversal being a bottom-up traversal (column 10, lines 13-26, column 20, lines 1-3, column 15, lines 53-67).

Claim 103:

The claim 103 encompasses the same scope of invention as that of claim 99 except additional claimed limitation that is identical to claim 87. The claims are rejected for the same reason set forth in claim 87.

Claim 104:

The claim 104 encompasses the same scope of invention as that of claim 103 except additional claimed limitation that opacity region representation of the parent node is determined by merging at least two second hierarchical structures.

However, Politis further discloses the claimed limitation that opacity region representation of the parent node is determined by merging at least two second hierarchical structures (column 15, lines 7-67).

Claim 105:

The claim 105 encompasses the same scope of invention as that of claim 103 except additional claimed limitation that opacity region representation of the parent node is determined by merging at least one second hierarchical structure and a bounding box.

However, Politis further discloses the claimed limitation that opacity region representation of said parent node is determined by merging at least one second hierarchical structure and a bounding box (column 15, lines 7-67).

Claim 106:

The claim 106 encompasses the same scope of invention as that of claim 97 except additional claimed limitation of said second traversal being a top-down traversal. However, Politis further discloses the claimed limitation of said second traversal being a top-down traversal (column 8, lines 33-44).

Claim 107:

The claim 107 encompasses the same scope of invention as that of claim 106 except additional claimed limitation that a first hierarchical structure of a parent node is at least propagated to a child node associated with said parent node. However, Politis further discloses the claimed limitation that a first hierarchical structure of a parent node is at least propagated to a child node associated with said parent node (column 8, lines 33-44).

Claims 108-110, 113-114:

The claim 108, 109, 110, 113, 114 encompasses the same scope of invention as that of claim 80, 81, 82, 96, 97 except additional claimed limitation of "an apparatus". However, Politis further discloses the claimed limitation of "an apparatus" (see the abstract, figure 12). The claim 108, 109, 110, 113, or 114 is therefore rejected for the same reason set forth in claim 80, 81, 82, 96 or 97 respectively.

Claims 115:

The claim 115 encompasses the same scope of invention as that of claim 80 except additional claimed limitation of "a computer program for a computer comprising software code portions for performing a method". However, Politis further discloses the claimed limitation of "a computer program for a computer comprising software code portions for performing a method" (column 3, lines 36-37, column 18, lines 29-31).

Claims 116:

The claim 116 encompasses the same scope of invention as that of claim 97 except additional claimed limitation of "a computer readable medium storing a computer program".

However, Politis further discloses the claimed limitation of "a computer readable medium storing a computer program" (figure 12, column 3, lines 36-37, column 18, lines 29-31).

Remarks

9. Applicant's arguments, filed 09/11/2003 and 09/08/2003, paper number 7, have been fully considered but they are not deemed to be persuasive.

10. Applicant argues in essence with respect to claim 33 and similar claims that:

> In Remarks, page 39, Applicant argues, "nothing has been found in Politis '797 that would teach or even suggest using region representation that can distinctly identify sub-regions that are opaque, transparent or partially transparent.

This is not found persuasive, as set forth in the Remarks Section of Final Rejection, because Politis teaches using region representation to distinctly identify regions or *sub-regions* such as the totally obscured region or opaque sub-image 42 of Figure 6, transparent region such as the foreground region 39 of Figure 6 and partially transparent region such as partially obscured region or the bounding box of text 43 of Figure 6 represented by a node in the expression tree. Politis teaches determining if the region represented by the node is obscured either totally or partially by one of the other regions, see column 7, lines 20-64; column 9, lines 1-11.

To precisely address the claim language rather than the applicant's arguments in view of the related claim limitation, Politis teaches the claim limitation of determining an opacity region representation for at least one node of the expression tree (*for example, e.g., the node 51 or the node 52 or the node 55 of Figures 6-8 wherein the image region representations in hierarchical data structures are given as quadtrees wherein the image regions are assigned opacity values*),

the opacity region representation being assigned one or more of three predetermined values, each predetermined value distinctly identifying whether a corresponding sub-region is an opaque region, a transparent region or partially transparent region (*the compositing operations for combining two portions of a single image involves the simultaneously identifying one of the predetermined values, <u>each predetermined values</u> identifying whether a corresponding sub-region being an opaque region such as the totally obscured region or opaque sub-image 42 of figure 6, a transparent region such as the foreground region 39 of figure 6, or a partially transparent region such as the partially obscured region or the bounding box of text 43 of figure 6. Politis further teaches determining if the region represented by the node is obscured either totally or partially by one of the regions*, see column 7, lines 20-64; column 9, lines 1-11.

10. Applicant argues in essence with respect to claim 33 and similar claims that:

In Remarks, page 40, Applicant argues, "nothing has been found in Politis '797 that would teach or suggest determining an opacity region representation for a node of the expression tree and then determining an obscurance region representation for the node of the expression tree based on an analysis of the opacity region representation associated with the node of the expression.

In response, the Examiner asserts that Politis further teaches the claim limitation of *optimizing the expression tree* by determining an obscurance region representation for at least the node of the expression tree (e.g., determining an obscurance region representation for the node 51 or the node 52 or the node 55 of Figures 6-8) based on an analysis of the opacity region representation

associated with the node of the expression tree (image regions with opacity information or the predetermined opacity values such as the regions comprising one or a combination of the opaque sub-image 42 of Figure 6 or the bounding box of text 43 of Figure 6 associated with the node 51 of Figure 6; because the resolution of the region is represented by the quadtree), the obscurance region representation being assigned one or more of a plurality of *further predetermined values*, each further predetermined value distinctly identifying whether a corresponding sub-region is *visible* in the image. Politis teaches the obscurance region representation that indicates at least one visible region such as unobscured region of the circle B of Figure 6. If a node is partly obscured by one or more regions represented by other nodes in the expression tree, a clipping operator is applied to the node in such a way that, when executing a compositing operator, substantially unobscured or visible regions of the image represented at the node are in the resultant composite of the region of the node. When an image is composited and subsequently rendered from an expression tree comprising nodes clipped by a clipping operator, substantially those portions of the graphical elements that are unobscured or visible by other graphical element of the image are *reproduced or rendered* and thereby optimizing the expression tree. See column 7, lines 20-64 and column 16.

Therefore, Politis fulfills the amended claim 33 as currently drafted.

Conclusion

11. This is a continuation of applicant's earlier Application No. 09/863405. All claims are drawn to the same invention claimed in the earlier application and could have been finally

rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (703) 605-1213. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6606 for regular communications and (703) 308-6606 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 395-3900.

jcw
April 13, 2004

MIC... ...ZAVI
...ERVIS... ...MINER
...ECHN... ...00